

Abstracts

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student), anticonvulsants (2.8 Rx/student), adrenergics/amphetamine (2.4 Rx/student), antidepressants (2.3 Rx), and antipsychotics (1.9 Rx/student). After controlling for demographics and Medicaid enrollment status, ANCOVA indicated a significant SBHC intervention effect (Time*SBHC) for both monthly total cost ($F = 8.82$, $p = 0.003$) and monthly mental health service cost ($F = 5.06$, $p = 0.025$). **CONCLUSION:** The SBHC program that provides mental health services for students did not decrease the total Medicaid costs, instead, might increase the health quality and health care accessibility for students with mental illnesses, and this hypothesis should be examined in future research.

PMH57

THE EFFECT OF BEHAVIORAL CARVE-OUTS ON PHARMACEUTICAL USE AND EXPENDITURES

Mark TL, Coffey R

Medstat, Washington, DC, USA

OBJECTIVE: Case studies of behavioral carve-outs using pre/post designs have found that they results in substantial savings. Prior studies have not, however, examined the impact of behavioral carve-outs on psychotropic medication usage and costs. This study fills this gap. **METHODS:** Data came from Medstat's MarketScan claims database. The sample comprised ten large employers with and without behavioral carve-outs. The employers included about 1.4 million employees and their dependents (about 890,000 were enrolled in carve-outs and 521,000 in non-carve-outs). A 2-part model was used to examine differences in the probability of use and the cost of services among users. Total costs, inpatient, outpatient, and pharmaceutical costs were examined. Independent variables included age, gender, diagnosis, region, plan type, and plan fixed effects (to control for benefit design). Predicted expenditures were calculated using the smearing technique. Inpatient and outpatient behavioral health claims were identified by diagnosis. Psychotropic medications were identified by the Redbook classification system. **RESULTS:** There was no difference in the probability of using pharmaceuticals or the costs of pharmaceuticals among users between carve-outs and non-carve-outs; although, predicted pharmaceutical expenditures were lower for carve-outs (\$4.80 versus \$3.90). Carve-outs had a lower probability of using inpatient care and outpatient care. Carve-outs had higher costs for outpatient care among users. The other differences were not statistically significant. Total predicted costs for carve-outs were about 28% lower than for non-carve-outs. **CONCLUSIONS:** Behavioral carve-outs have an incentive to shift usage away from mental health ambulatory and hospital services and towards pharmaceuticals because pharmaceutical usage is typically off the budget for which they are held accountable. However, without very aggressive utilization review, behavioral carve-outs may not have the tools to influence pharmaceutical usage. This study finds that the main effect of behavioral carve-outs is on the probability of inpatient and outpatient behavioral health service usage.

PMH58

THE RELATIONSHIP BETWEEN MENTAL DISTRESS, HEALTH RISKS AND HEALTH CARE COSTS FROM THE MANAGED CARE HEALTH RISK ASSESSMENT DATABASE

Manocchia M¹, Brown JS², Finkelstein JS³¹Blue Cross and Blue Shield of Rhode Island, Providence, RI, USA;²Boston Health Economics, Inc., Waltham, MA, USA; ³Brown

University, Providence, RI, USA

OBJECTIVES: The association between mental distress and health risks, protective health behavior (in the form of preventive health screenings) and health care costs was evaluated

among a commercially insured, adult population. **METHODS:** The sample contains 10,055 employees age 18–75, which is a sub-set of the managed care, health risk assessment database [MCHRA]. The MCHRA data was collected from 2000–2003. Bi-variable analysis, logistic regression and general linear regression models were performed to evaluate the association between mental distress (low, medium and high) and health risks, health lifestyle, preventive health screenings, and health care costs. **RESULTS:** Using multi-variable logistic regression models, those with high mental distress were significantly more likely to smoke (adjusted odds ratio [AOR] 1.26, $p = 0.0027$), drink alcohol (AOR 5.75, $p < 0.0001$), more likely to not wear a helmet when biking (AOR, 1.37, $p = 0.0188$), more likely to be overweight (AOR 1.21, $p = 0.0350$), more likely to feel a loss of self esteem (AOR 8.86, $p < 0.0001$), more likely to have lost interest in life (AOR 12.23, $p < 0.0001$), more likely to report depression (AOR 16.53, $p < 0.0001$), more likely to have sleep problems (AOR, 3.81, $p < .0001$) and less likely to be tested for colon cancer through FOBT tests (AOR 1.429, $p = .0006$) or colonoscopy (AOR 1.93, $p < 0.0001$). Those with mental distress were more likely to have higher health care costs overall ($> \$1,700$; $F = 20.08$, $p < 0.0001$). Health care cost areas associated with disease classifications showed those with higher distress had higher costs related to treatment of mental disorders ($> \$140$; $F = 44.50$, $p < 0.0001$), the nervous system ($> \$70$; $F = 3.34$, $p = 0.0675$) and respiratory system ($> \$120$; $F = 15.36$, $p < 0.0001$). **CONCLUSIONS:** The findings indicate a strong association between mental distress, health risk and lifestyle, and preventive health behavior and health care costs.

PMH59

ANTIPSYCHOTIC ADHERENCE AMONG CENTRAL TEXAS VETERANS

Yang M¹, Barner J¹, Worchel J²¹University of Texas at Austin, Austin, TX, USA; ²Veterans Administration, Austin, TX, USA

OBJECTIVES: Unlike many other health care organizations, central Texas veterans do not have day supply limits on medications. Thus, the potential for medication over-adherence exists. The objectives of this study were to: 1) examine the adherence rate (AR) and medication possession ratio (MPR) among veterans taking antipsychotics; 2) determine whether over-adherence ($AR > 1$ or $MPR > 1$) exists among veterans taking antipsychotics; and 3) evaluate factors related to over-adherence. **METHODS:** Data were extracted from the Central Texas Veterans Health Care System (CTVHCS) from September 1995–October 2002 for continuously enrolled adult outpatients who were on monotherapy, and had at least two prescriptions within a year. Demographic and relevant clinical information, including age, gender, ethnicity, psychiatric diagnoses, and antipsychotic prescription medication information were collected. Subjects were followed up to 12 months. **RESULTS:** Among the eligible patients ($N = 3252$), the mean AR was 1.56 ($sd = 2.58$) and MPR was 1.23 ($sd = 0.75$). Over one-half (54.4%) of the subjects were over-adherent with ARs and MPRs > 1 . For those over-adherent patients, the mean AR was 2.38 ($sd = 3.27$) and MPR was 1.70 ($sd = 0.71$). Multiple logistic analyses revealed that schizophrenic patients ($OR = 1.241$, $p = 0.0085$) were significantly more likely to be over-adherent ($MPR > 1$), while nonwhite ($OR = 0.617$, $p < 0.0001$), depressed patients ($OR = 0.801$, $p = 0.0085$) and atypical users ($OR = 0.620$, $p < 0.0001$) were significantly less likely to be over-adherent. A second logistic analysis to assess individual antipsychotic agents showed that, compared to haloperidol, quetiapine users ($OR = 2.309$, $p = 0.0073$) were significantly more likely to be over-adherent, and olanzapine (OR

= 0.557, $p < 0.0001$) users were significantly less likely to be over-adherent. **CONCLUSION:** Over one-half of central Texas veterans were over-adherent with their antipsychotic therapy. Further studies are warranted to determine the impact of excessive medication possession on patient outcomes as well as the economic impact on the VA system.

PMH60

ANALYSIS OF LONGITUDINAL CLAIMS DATA TO EXAMINE FIRST AND SECOND-LINE USE OF PEMOLINE (CYLERT®)

Morrato E¹, Staffa J²

¹Johns Hopkins University Bloomberg School of Public Health (FDA student project), Baltimore, MD, USA; ²Food and Drug Administration, Rockville, MD, USA

OBJECTIVE: Pemoline, a CNS stimulant, is approved for Attention Deficit and Hyperactivity Disorder (ADHD). In practice, it's additionally used to treat narcolepsy and MS-related fatigue. Because pemoline was associated with acute liver failure, FDA relabeled its use as 'second-line' therapy (SLT) for ADHD in 1996. This retrospective observational study examines longitudinal prescription records suggestive of first or second-line use to describe apparent compliance with relabeling and factors associated with second-line use. **METHODS:** Prescription claims from a continuously-enrolled population (September 1, 2000—September 30, 2002) from AdvancePCS pharmacy benefit manager (PBM) were evaluated for patients with 1 or more pemoline claims. Patients were categorized using pemoline as SLT or 'first-line' therapy (FLT) depending on presence/absence of other CNS stimulant prescriptions 90 days prior to the first pemoline claim. Chi-square compared SLT and FLT patients with regard to age, gender and prescribing physician specialty. **RESULTS:** Of 50M covered lives, 2320 had pemoline claims: 51% male, 34% age 0–19 years. 22% used pemoline as SLT (95% CI: 19%–24%). Children <20 years were more likely to use pemoline as SLT (40%) than adults >19 years (14%) ($p < 0.001$). Across all ages, males were more likely to use pemoline as SLT (27%) than females (17%) ($p < 0.001$). Physician specialty was associated with SLT ($p < 0.001$): pediatrics (43%), psychiatry (32%), primary care (22%), and neurology (5%). **CONCLUSIONS:** Most patients in a large PBM appear to use pemoline without antecedent prescriptions for other CNS stimulants, a prescribing pattern inconsistent with FDA-approved SLT labeling. Although ADHD summertime "drug holidays" >90 days may have inflated estimates of FLT that was actually SLT, children had higher levels of SLT than adults. FDA's labeling action may have affected approved ADHD usage (predominantly male pediatric patients) more than off-label narcolepsy/MS usage (older neurology patients). These results in a large patient population are consistent with earlier, smaller studies.

PMH61

TRENDS IN ANTIPSYCHOTIC PRESCRIBING TO CHILDREN AND ADOLESCENTS: 1996 TO 2001

Patel NC¹, Crismon ML¹, Hoagwood K², Johnsrud MT¹, Rascati K¹, Wilson JP¹

¹The University of Texas at Austin, Austin, TX, USA; ²Columbia University, New York, NY, USA

OBJECTIVES: The purpose of this study was to examine trends in antipsychotic use in children and adolescents enrolled in three Medicaid programs (a Midwestern [MM], Southern [SM], and Western [WM] state) or a national private managed-care organization (MCO). **METHODS:** Antipsychotic prevalence was defined as the number of individuals under the age of 20 years with at least one prescription claim for an antipsychotic agent,

regardless of subclass, per 1000 enrolled children and adolescents. Total, antipsychotic subclass, age-specific, and gender-specific prevalence rates of antipsychotic use from 1996 to 2001 were estimated. Time trends of antipsychotic prevalence estimates were assessed. **RESULTS:** From 1996 to 2001, the prevalence of total antipsychotic use increased in each insurance program (MM: +9.6 per 1000, odds ratio [OR] 1.24; SM: +9.2, OR 1.19; WM: +2.4, OR 1.10; and, MCO: +2.0, OR 1.24). The prevalence of typical antipsychotic use decreased (prevalence ratios [2001:1996] 0.29 to 0.72; OR 0.78 to 0.98), while the prevalence of atypical antipsychotics dramatically increased (prevalence ratios 5.99 to 19.73; OR 1.35 to 1.56). Across all systems, the use of antipsychotics increased in children and adolescents above the age of 5 years. Male and female antipsychotic prevalence rates also increased. Antipsychotic usage was highest in SM, followed by MM, WM, and MCO. **CONCLUSIONS:** In all 4 programs, the prevalence of antipsychotic use in children and adolescents increased significantly from 1996 to 2001. This is attributed to the increased use of atypical antipsychotics. Geographic and health system variations in antipsychotic prescribing existed. Given the limited efficacy and safety data with antipsychotics in children and adolescents, this raises questions about appropriate use and emphasizes the need for additional studies of atypical antipsychotics in this population.

PMH62

HOSPITAL UTILIZATION FOLLOWING AN OPEN ACCESS POLICY FOR ATYPICAL ANTIPSYCHOTIC MEDICATIONS FOR PATIENTS WITH SCHIZOPHRENIA

O'Reilly DJ, Parfrey PS

Memorial University of Newfoundland, St. John's, NF, Canada

OBJECTIVES: Determine whether there was a reduction in hospital utilization following the implementation of an open access policy for atypical antipsychotic medications for a publicly funded drug program in Newfoundland and Labrador. **METHODS:** The inpatient records of patients discharged from hospital in 1995/96, 1998 and 2000 with an ICD-9 diagnosis of schizophrenia were reviewed to determine the factors influencing total days hospitalization and readmission rates. Cox proportional hazards models were used to identify factors associated with LOS and logistic regression to determine early readmission. **RESULTS:** Six hundred forty-five patients admitted in 3 study years had 1,625 episodes of care totaling 47,098 days. The number of hospital days increased by 1229 days in 1998 and 602 days in 2000 when compared to baseline (1995/96). The study populations were similar with respect to sociodemographic factors, psychiatric status and level of care provided. The proportion of patients discharged on an atypical agent from an index admission increased from 15% at baseline to 71% in the final year and the average LOS increased from 31 days to 39 days. Requiring electroconvulsive therapy (ECT), switching from a conventional antipsychotic to an atypical agent during the admission, requiring seclusion, or having thought disorder was independently associated with a significantly longer LOS. Leaving against medical advice (AMA), or being suicidal on admission decreased hospitalization. Fifty percent of the population was readmitted in 215 days in 1995/96, 221 days in 1998, and 223 days in 2000. Independent of the class of antipsychotic prescribed on last discharge, leaving AMA and number of previous admissions significantly increased the risk of readmission within 1 year. **CONCLUSIONS:** The number of patients with schizophrenia admitted to hospital decreased but the LOS increased with no change in readmission rates. The expectations that the associated higher costs would be offset by decreased hospitalization for schizophrenia were not achieved.